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| APPLICATION NO.                  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------------|-------------|----------------------|---------------------|------------------|
| 10/611,501                       | 06/30/2003  | Terry L. Sterrett    | 42P15934            | 3363             |
| 8791                             | 7590        | 04/06/2005           |                     | EXAMINER         |
| BLAKELY SOKOLOFF TAYLOR & ZAFMAN |             |                      |                     | CHU, CHRIS C     |
| 12400 WILSHIRE BOULEVARD         |             |                      |                     |                  |
| SEVENTH FLOOR                    |             |                      | ART UNIT            | PAPER NUMBER     |
| LOS ANGELES, CA 90025-1030       |             |                      | 2815                |                  |

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/611,501             | STERRETT ET AL.     |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Chris C. Chu           | 2815                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 06 January 2005.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1 - 15 is/are pending in the application.  
 4a) Of the above claim(s) 12 - 15 is/are withdrawn from consideration.  
 5) Claim(s) \_\_\_\_\_ is/are allowed.  
 6) Claim(s) 1 - 11 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 01 December 2003 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### *Response to Amendment*

1. Applicant's amendment filed on January 6, 2005 has been received and entered in the case.

### *Drawings*

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the limitation "wherein the encapsulant is disposed between and contacts the first support substrate and the second support substrate" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet"

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pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### *Claim Objections*

3. Claims 1, 2, 4 and 6 are objected to because of the following informalities:
  - (A) In claim 1, line 10, "a second substrate," should be --a second support substrate;-- for consistency with other claims. (In claims 4 and 6, "the second support substrate" lacks antecedent basis.)
  - (B) In claim 2, line 3, "the support substrate" should be --the first support substrate--. Appropriate correction is required.

### *Claim Rejections - 35 USC § 102*

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1 – 7 and 9 – 11 are rejected under 35 U.S.C. 102(e) as being anticipated by Mistry et al. (U.S. Pat. No. 6,815,254).

Regarding claim 1, Mistry et al. discloses in e.g., Fig. 1 an apparatus comprising:

- a first support substrate (20; column 2, line 8) comprising a plurality of first support contacts (28) and a plurality of second support contacts (26) on a surface of the first support substrate;
- a chip (32; column 2, line 36) comprising a plurality of circuits (44 and circuits in the active area of the chip) coupled to respective ones of a plurality of externally accessible chip contacts (34 and 37), wherein the chip contacts are coupled (by wire 40) to respective ones of the first support contacts (26);
- a plurality of fusible masses (52 or 96 in Fig. 7; column 2, lines 59 – 65) coupled to respective ones of the plurality of second support contacts (28);
- an electrically-insulating encapsulant (50; column 2, line 66) on the first support substrate and the chip; and
- a second substrate (53; column 3, line 6);
- wherein the encapsulant (50 and 54) is disposed between and contacts the first support substrate and the second support substrate (see Fig. 1).

Regarding claim 2, Mistry et al. discloses in e.g., Fig. 1 the plurality of fusible masses (52) having a thickness at least equivalent to the thickness of the encapsulant measured from the surface of the support substrate at one of the plurality of fusible masses.

Regarding claims 3 and 10, Mistry et al. discloses in e.g., Fig. 1 the encapsulant (50) being present in an amount to encapsulate the chip (32), circuit structure (claim 10; 32) and encapsulating a portion of respective ones of the plurality of fusible masses (52; see e.g., Fig. 1).

Regarding claim 4, Mistry et al. discloses in e.g., Fig. 1 the plurality of second support contacts (28) being positioned on the first support substrate to align with contacts (the pads that contact with the elements 52) of the second support substrate (53; see Fig. 1).

Regarding claim 5, Mistry et al. discloses in e.g., Fig. 1 the plurality of second support contacts (28) being positioned around the periphery of the first support substrate.

Regarding claim 6, Mistry et al. discloses in e.g., Fig. 1 the second support substrate (53) comprising a plurality of second support contacts (the pads that contact with the elements 52) on a surface thereof, the plurality of second support contacts coupled directly to respective ones of the plurality of fusible masses (52).

Regarding claim 7, Mistry et al. discloses in e.g., Fig. 1 an apparatus comprising:

- a first support substrate (20) comprising at least one circuit structure (32) and a plurality of first support contacts (26 and 28) on a first surface thereof, the plurality of first support contacts electrically coupled (by wire 40) to respective ones of circuits (34 and 37) of the at least one circuit structure;
- a plurality of fusible masses (52 or 96 in Fig. 7) on respective ones of the plurality of first support contacts;
- an electrically-insulating encapsulant (50) on the first support substrate and on the at least one circuit structure; and
- a second support substrate (53) comprising at least one circuit structure (the chip in the element 13; column 3, lines 46 – 48) on a first surface thereof and having a plurality of second support contacts (the pads that contact with the elements 52) on a second surface thereof and coupled to respective ones of the plurality of fusible

- masses (52), the plurality of second support contacts electrically coupled to respective ones of circuits of the at least one circuit structure (e.g., Fig. 1 and column 3, lines 46 – 48),
- wherein the encapsulant (50 and 54) is disposed between and contacts the first support substrate and the second support substrate (see Fig. 1).

Regarding claim 9, Mistry et al. discloses in e.g., Fig. 1 the plurality of fusible masses (52) having a thickness at least equivalent to the thickness of the encapsulant (50) measured from the surface of the first support substrate at one of the plurality of fusible masses.

Regarding claim 11, Mistry et al. discloses in e.g., Fig. 1 the plurality of support contacts (26 and 28) of the first support substrate being positioned around the periphery of the first support substrate.

#### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mistry et al. in view of Chatterjee (U. S. Pat. No. 4,695,872).

While Mistry et al. discloses in Fig. 6 the use of chips or circuit structures in each one of the chip packages, Mistry et al. does not appear to provide a specific type of the at least one chip

to be a microprocessor and the other chip to be a memory. Chatterjee teaches in e.g., Fig. 4 and column 3, lines 63 – 64 at least one chip (14) to be a microprocessor on a first support substrate (10) and the other chip to be a memory (16) on a second support substrate (52). It would have been obvious to one of ordinary skill in the art at the time the present invention was made to apply the microprocessor chip and memory chip as the specific type of the chips of Mistry et al. as taught by Chatterjee to provide high speed exchanges of data between the memories to perform a task according to a software program (column 2, lines 1 – 6).

***Response to Arguments***

8. Applicant's arguments with respect to claims 1 and 7 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chris C. Chu whose telephone number is 571-272-1724. The examiner can normally be reached on 11:30 - 8:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 517-272-1664. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Chris C. Chu  
Examiner  
Art Unit 2815

c.c.

Monday, March 28, 2005

  
GEORGE ECKERT  
PRIMARY EXAMINER